

APPARATUS FOR TRANSFER OF HEAT ENERGY BETWEEN A BODY SURFACE AND HEAT TRANSFER FLUID

ABSTRACT OF THE DISCLOSURE

In apparatus for heat exchange to and from a body surface using a heat transfer liquid a heat exchanger comprises a plurality of elements within a casing connected axially against one another with spacer tube elements. Each element has its periphery spaced from the body surface to provide a flow gap for heat transfer fluid in heat exchange contact with the surface. The element have plenums separating each from one another forming connecting flow spaces for the heat transfer liquid between the heat transfer flow gap and inlet and outlet passages passing through the body. A preferred apparatus is a cylindrical rotor within a cylindrical stator with an annular processing space between them, the rotor containing a stack of heat exchange elements of the respective shape permitting high heat flux rates and uniform temperature distribution over the total rotor heat transfer surface.